



Impact of PCV13 on Invasive Pneumococcal Disease (IPD) Burden and the Serotype Distribution in the U.S.

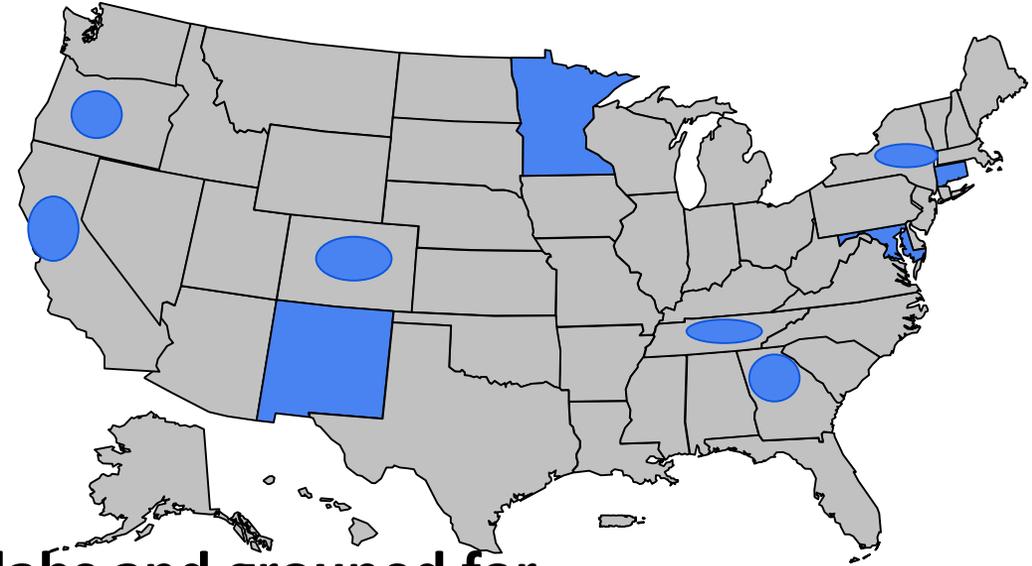
Tamara Pilishvili, PhD MPH

Advisory Committee on Immunization Practices

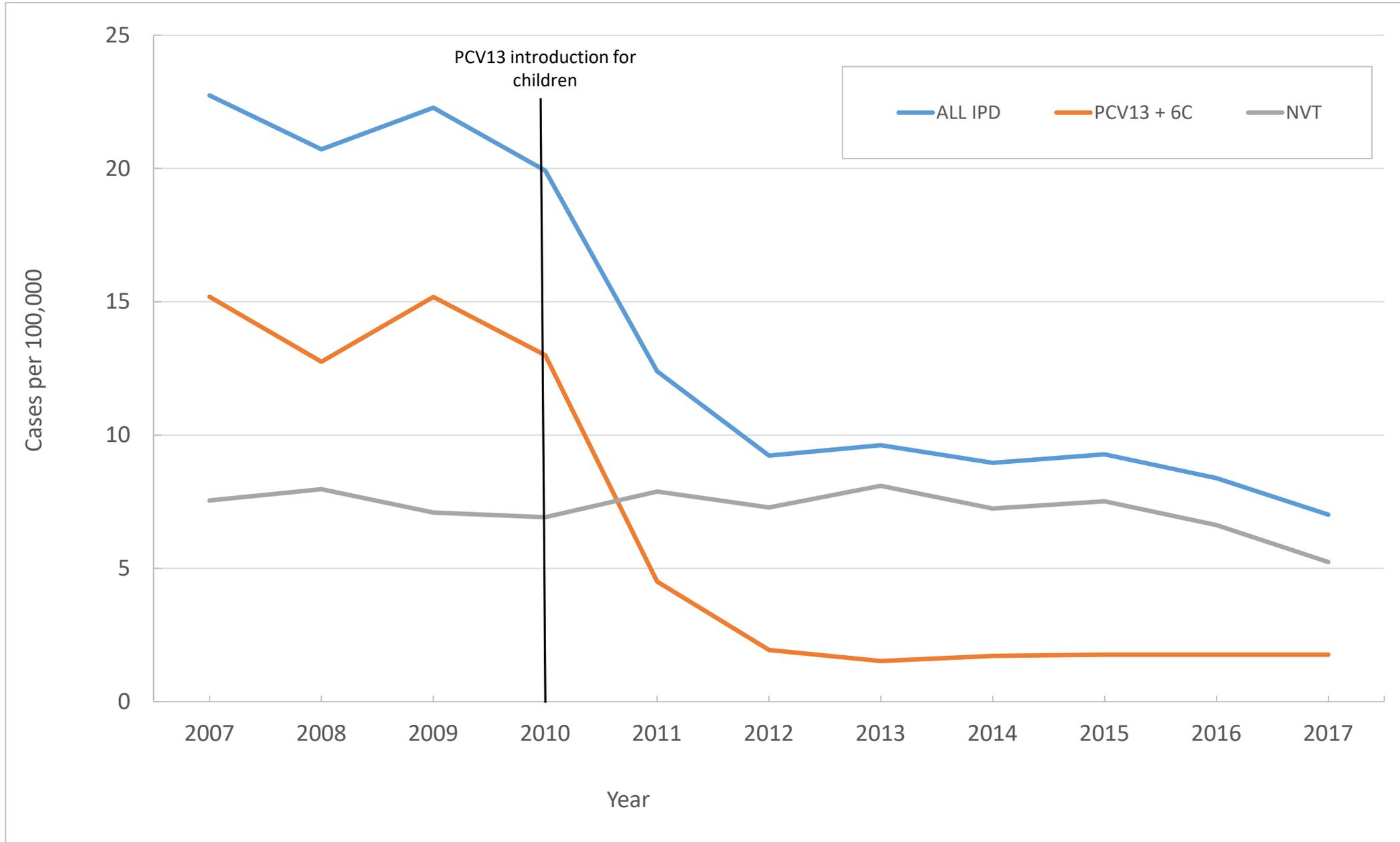
October 24th, 2018

Methods

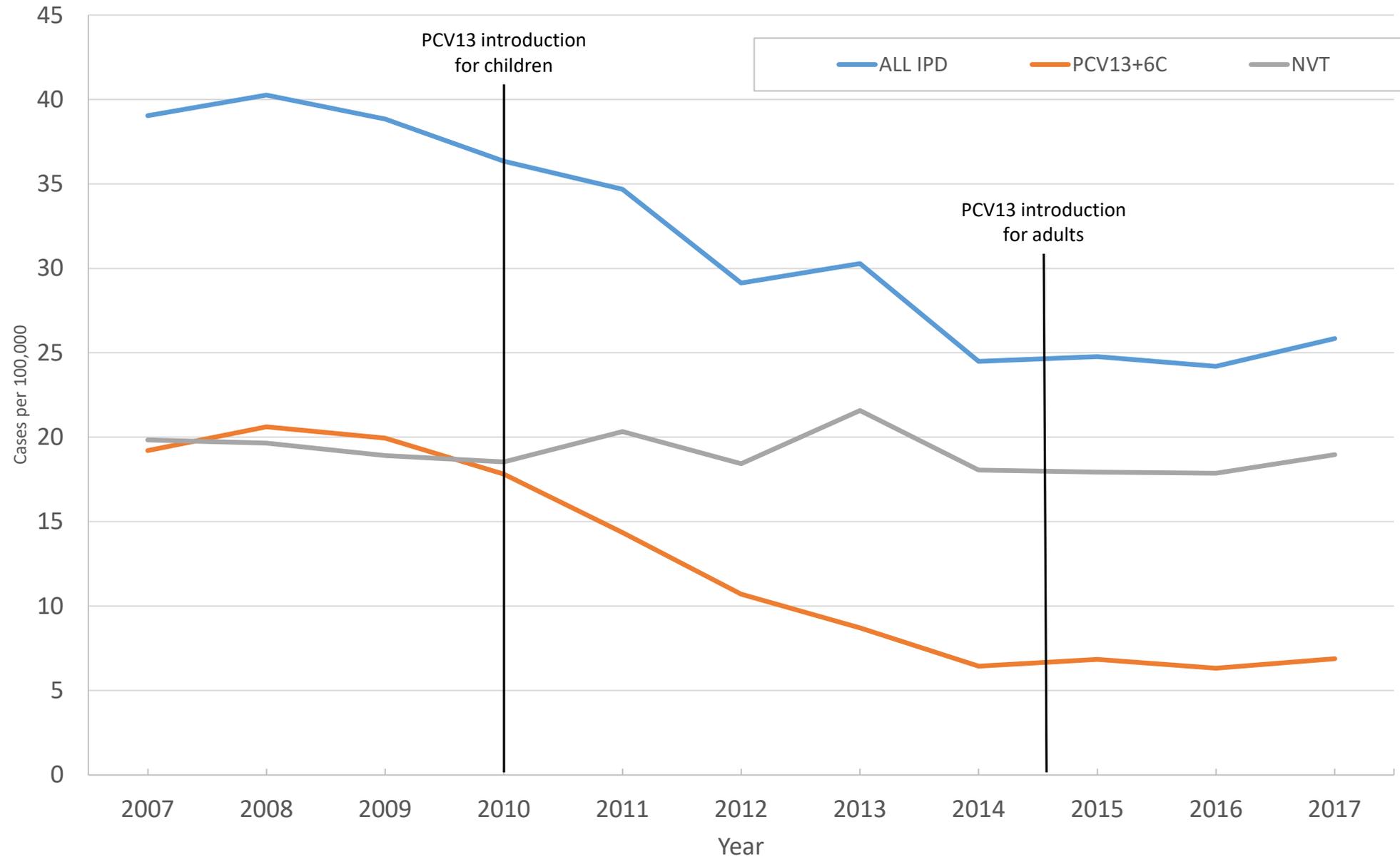
- **Active Bacterial Core surveillance (ABCs):**
 - Active laboratory and population-based surveillance, 10 sites
 - Pneumococcus isolation from sterile site
- **Isolates serotyped by Quellung or PCR at reference labs and grouped for analysis:**
 - PCV13: 13 types included in PCV13 +6C (cross protection)
 - NVT: Types not included in PCV13
- **US Census Bureau:**
 - Race-bridged post-census population estimates as denominators
- **Overall and serotype-specific IPD incidence rates (cases per 100,000)**



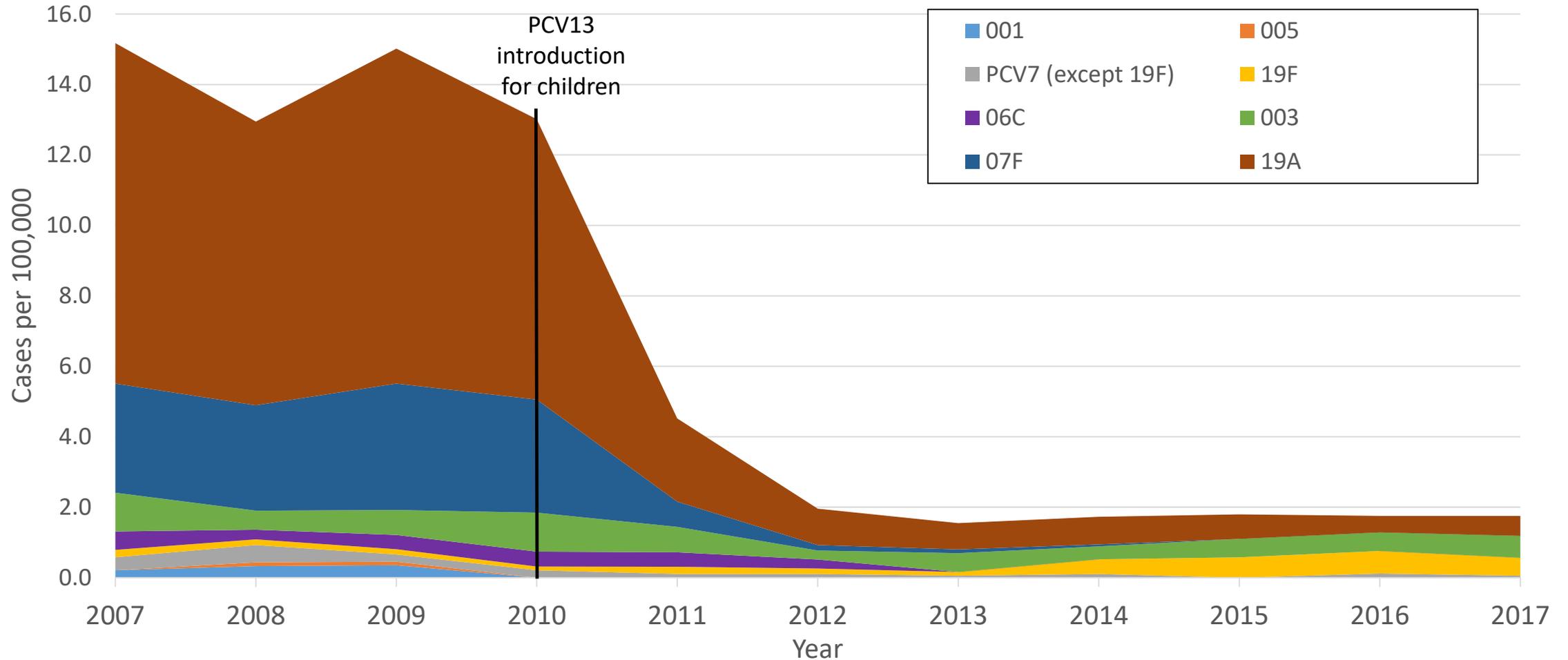
IPD rates among children <5 years old, 2007–2017



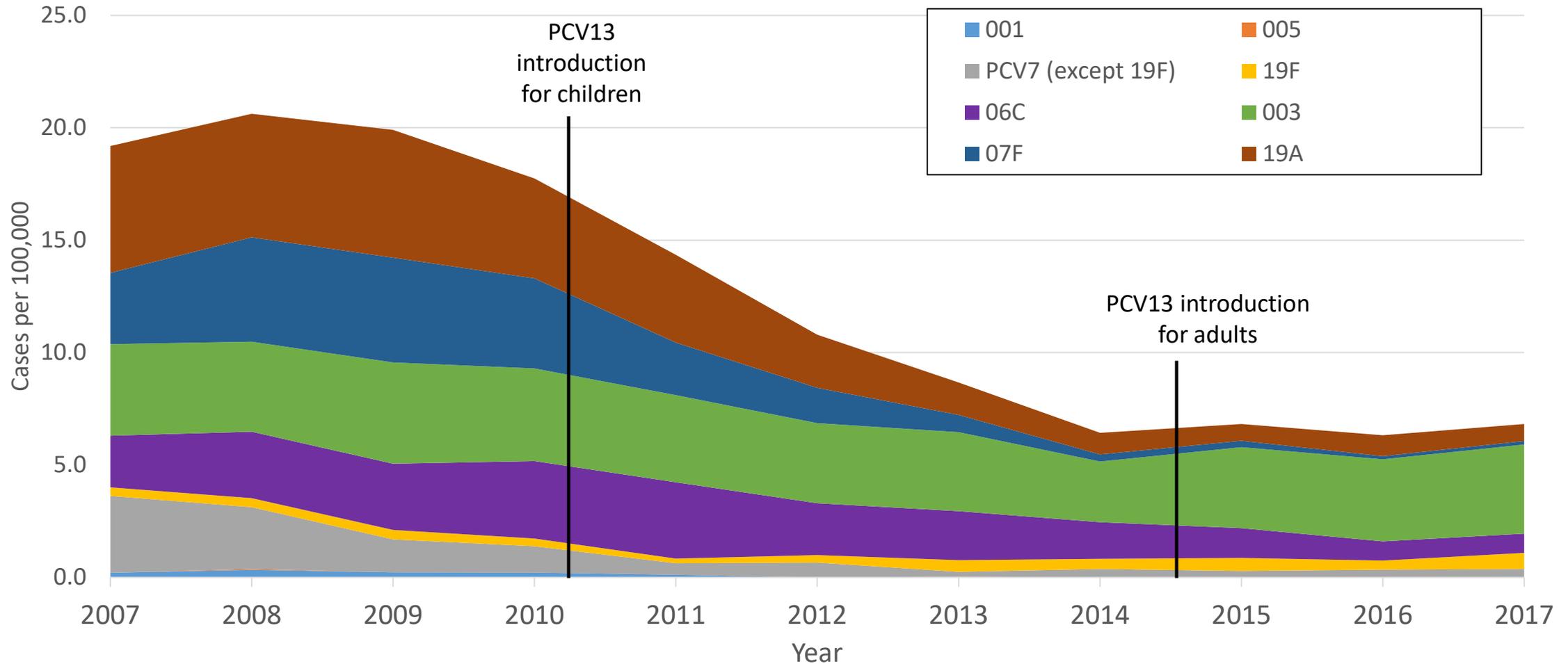
IPD rates among adults ≥ 65 years old, 2007–2017



IPD caused by PCV13 serotypes and type 6C among children <5 years old, 2007–2017

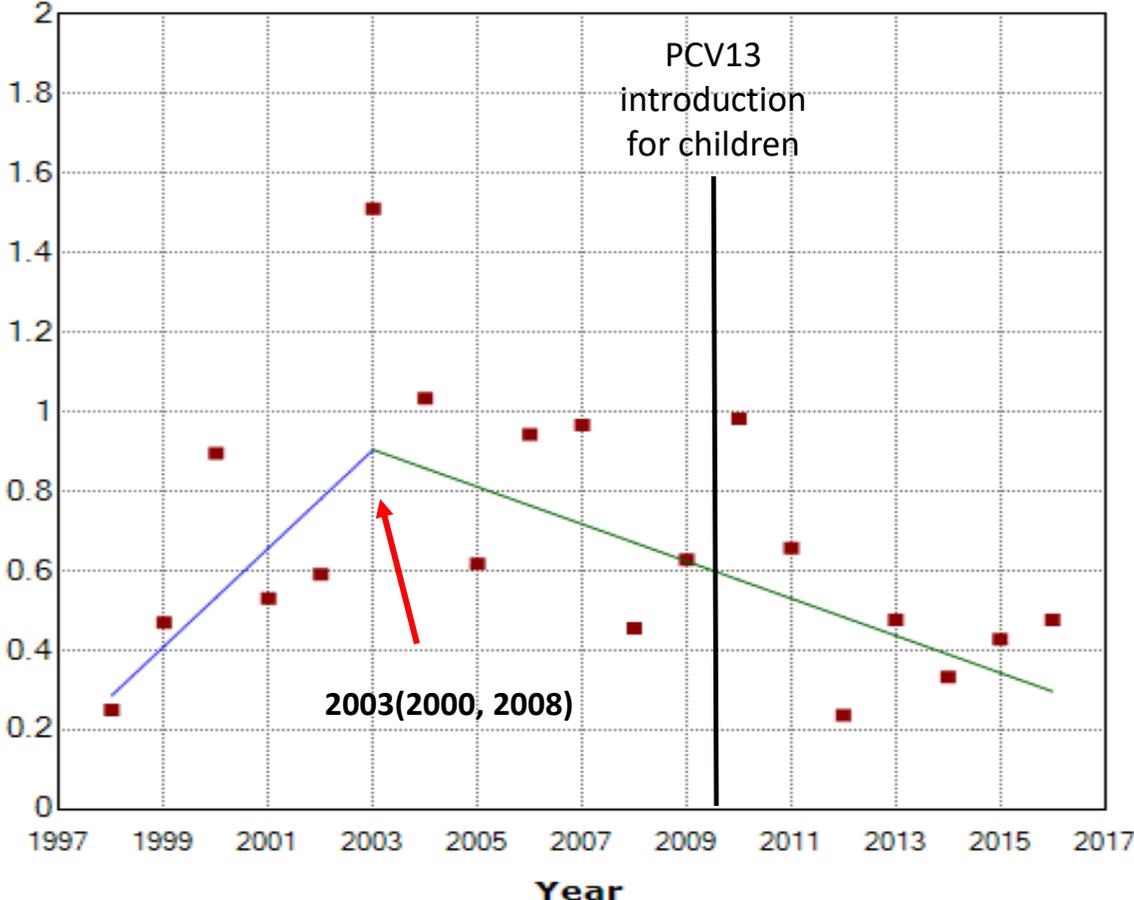


IPD caused by PCV13 serotypes and type 6C among adults ≥ 65 years old, 2007–2017

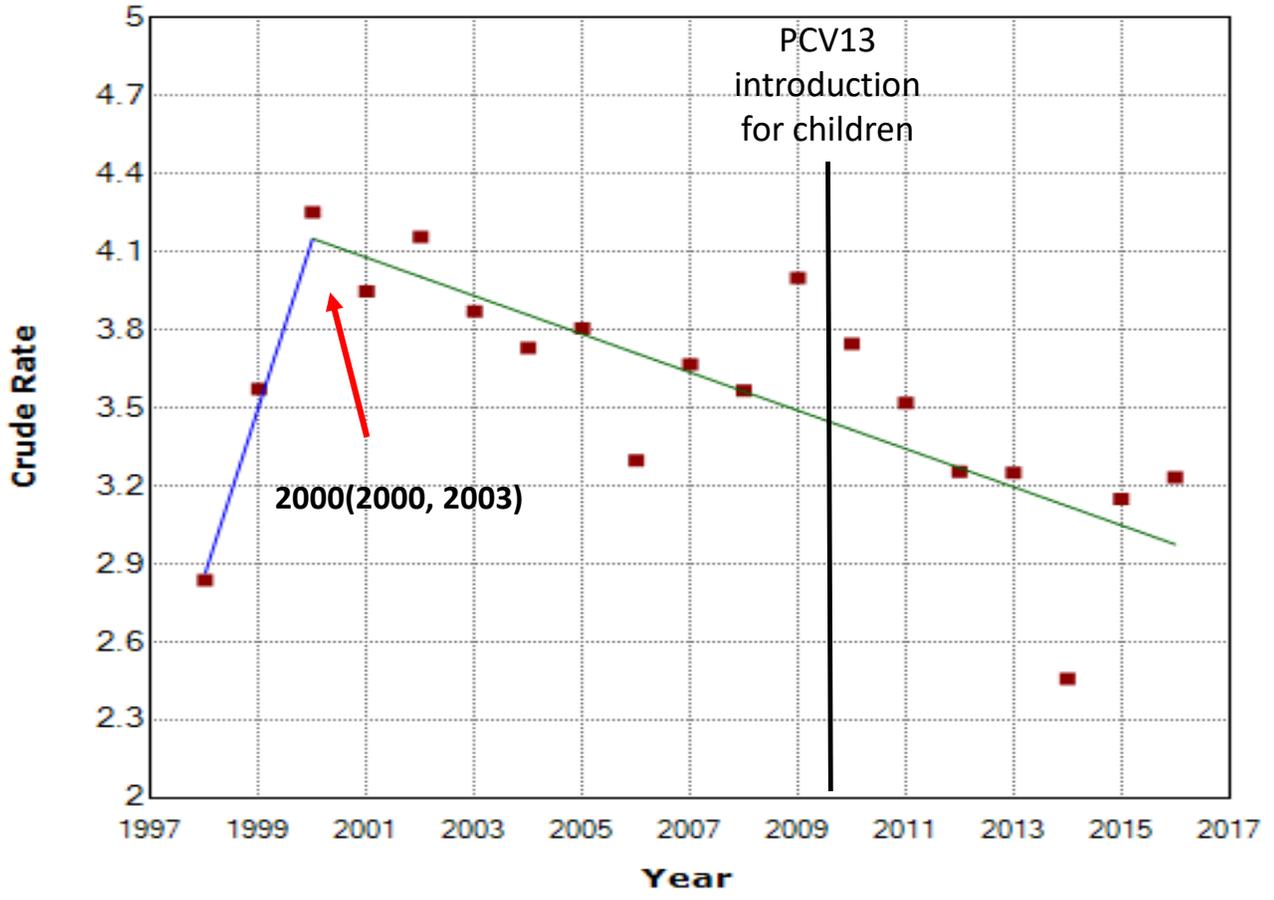


Changes in serotype 3 incidence, 1998–2017

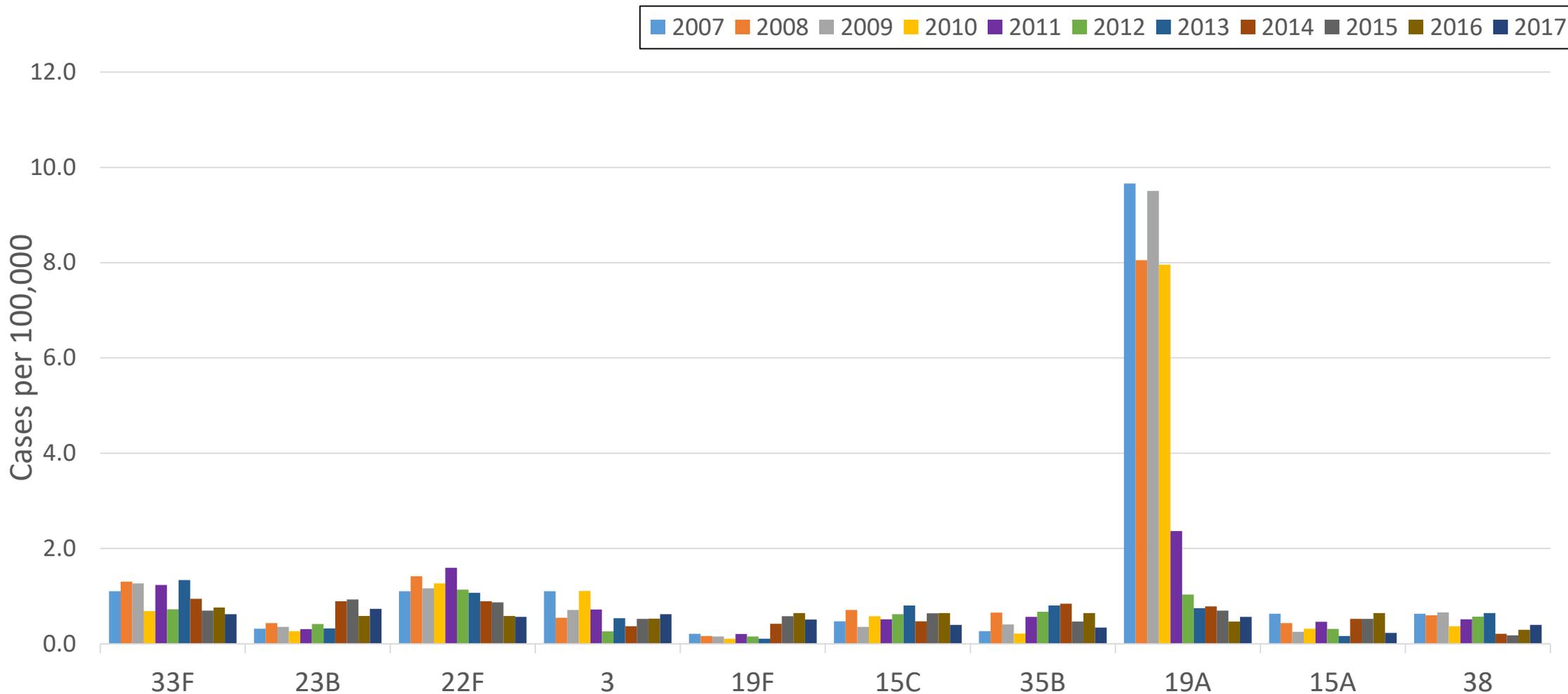
Children <5 years



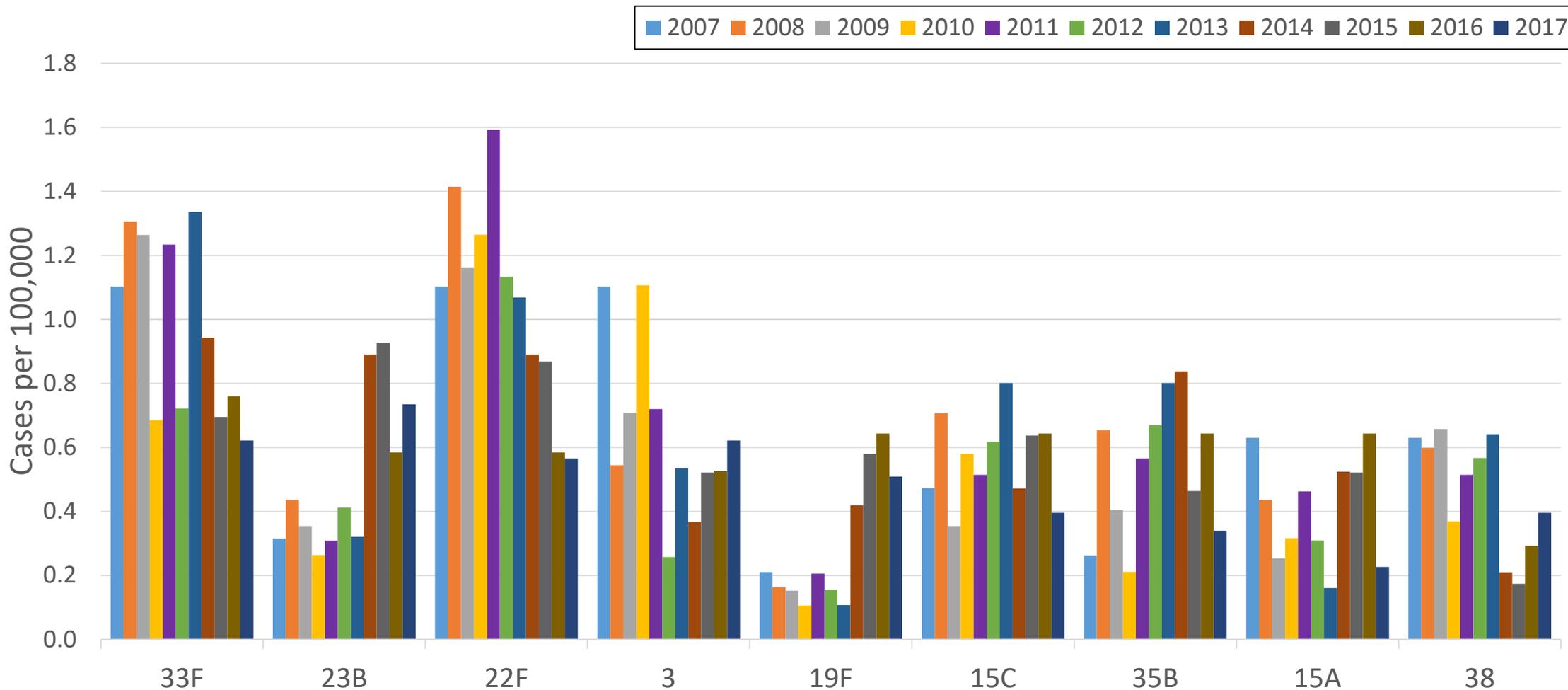
Adults ≥65 years



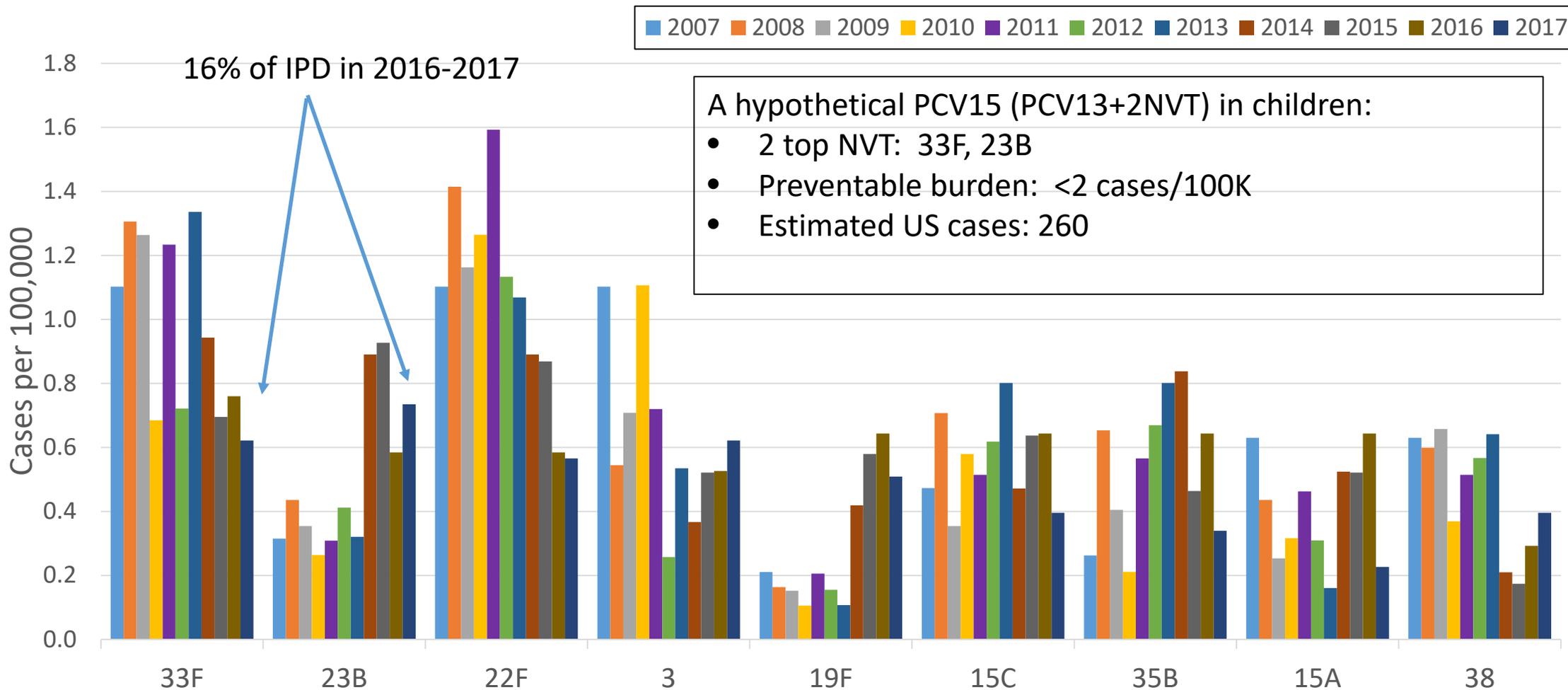
IPD rates among children <5 years old, 2007-2017, top 10 serotypes 2016-2017



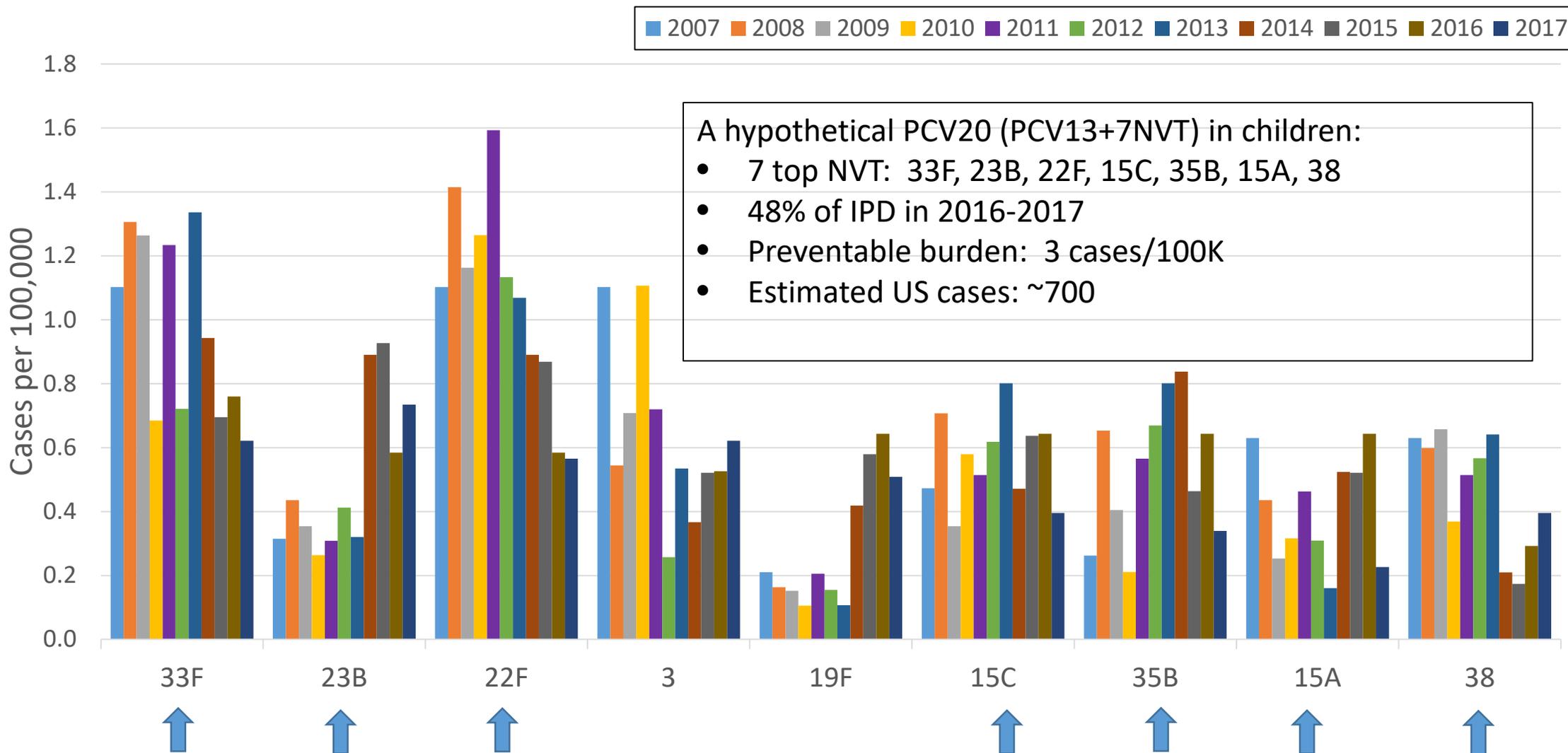
IPD rates among children <5 years old, 2007-2017, top serotypes 2016-2017 (excluding 19A)



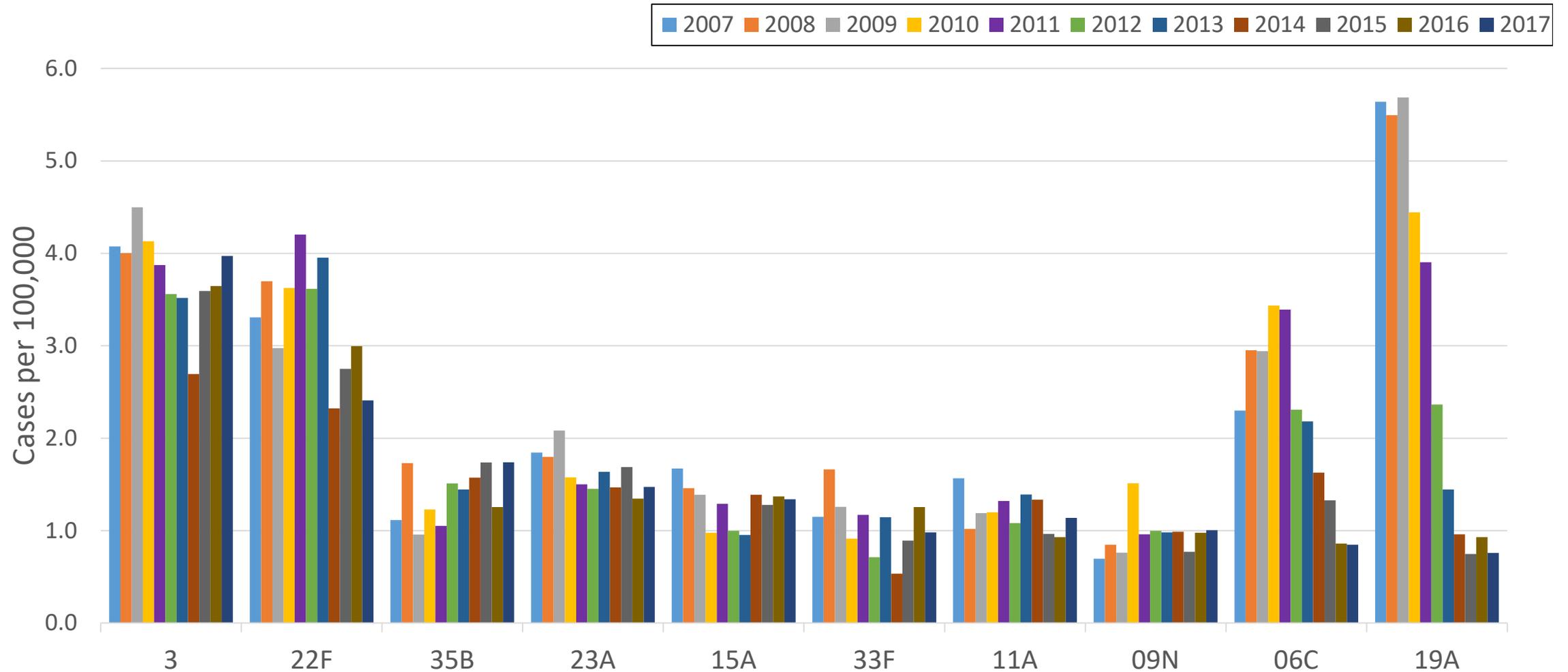
IPD rates among children <5 years old, 2007-2017, top serotypes 2016-2017 (excluding 19A)



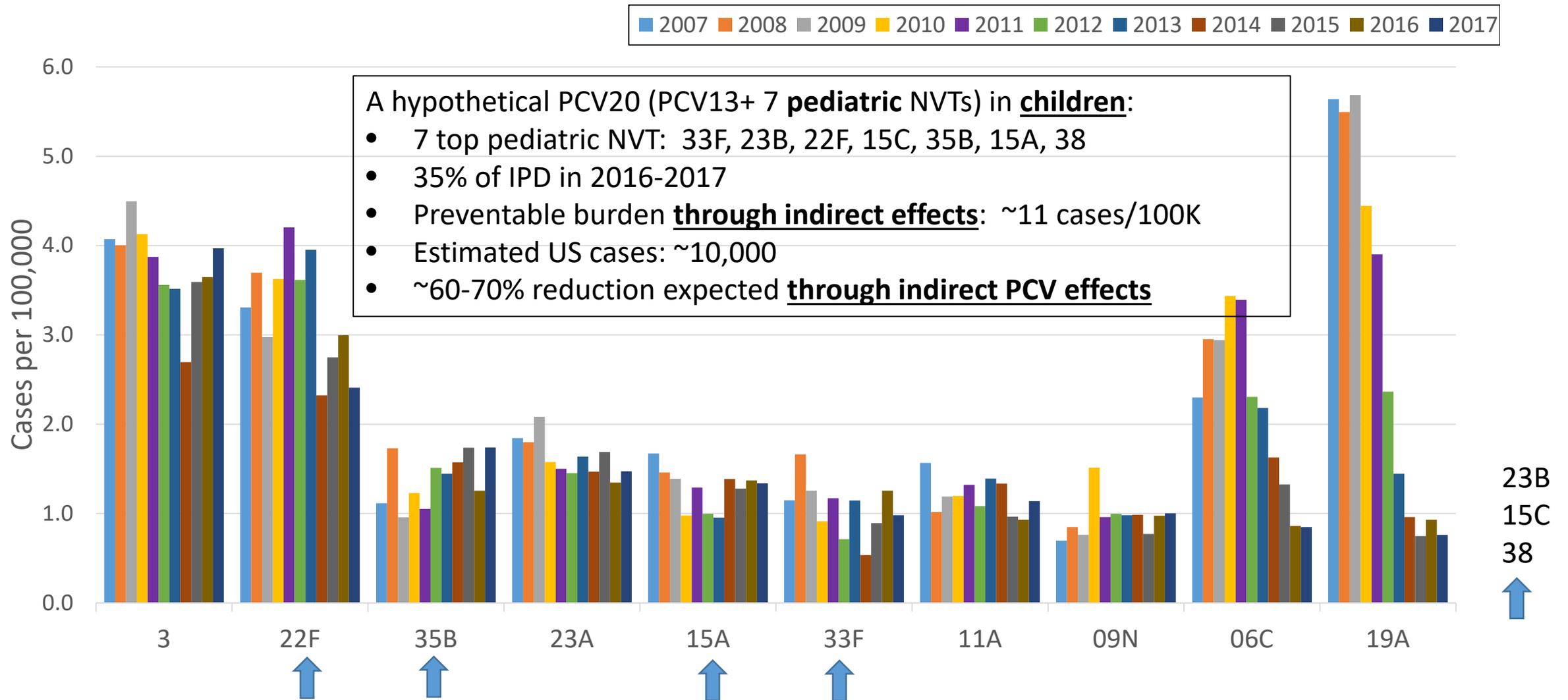
IPD rates among children <5 years old, 2007-2017, top serotypes 2016-2017 (excluding 19A)



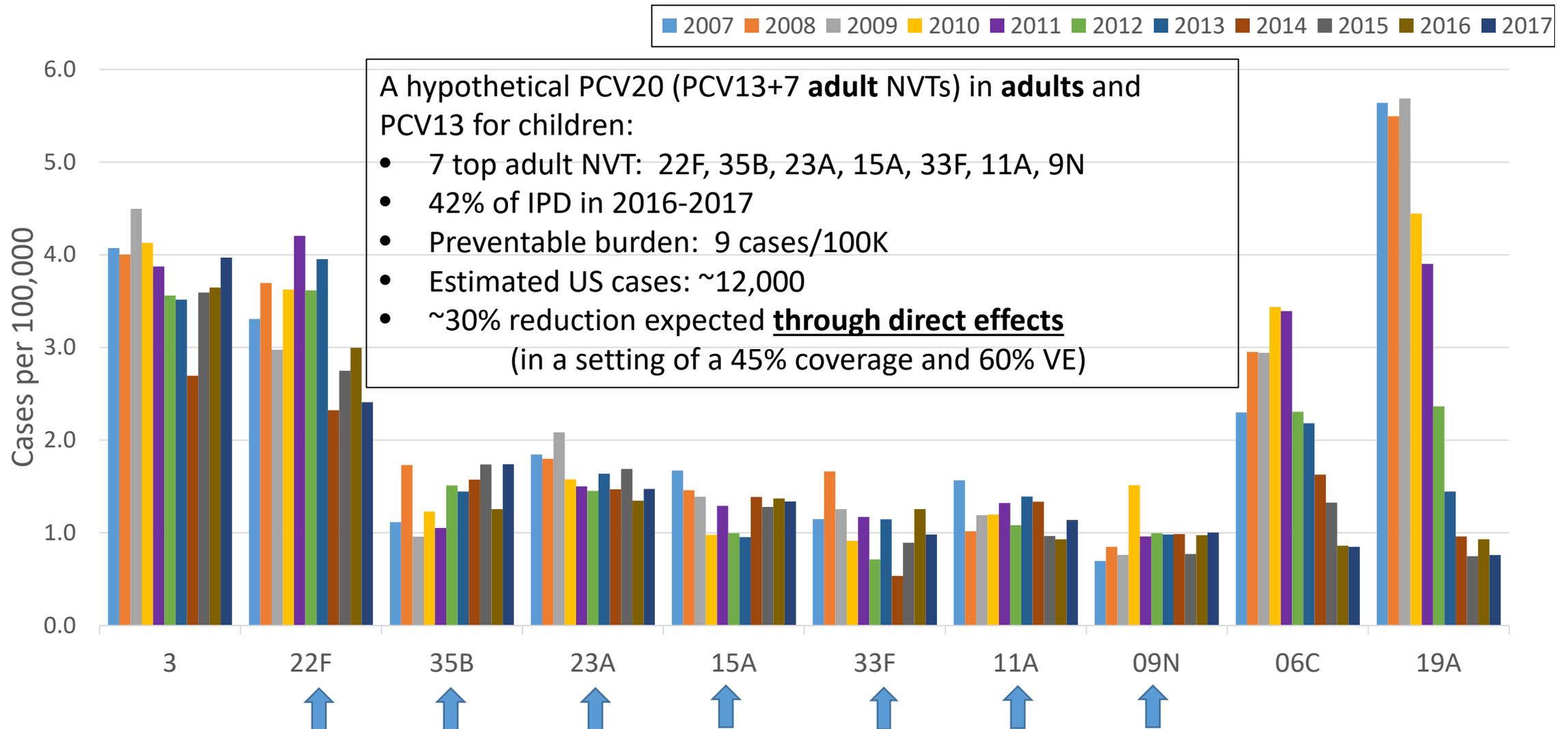
IPD rates among adults ≥ 65 years old, 2007-2017, top serotypes 2016-2017



IPD rates among adults ≥ 65 years old, 2007-2017, top serotypes 2016-2017



IPD rates among adults ≥ 65 years old, 2007-2017, top serotypes 2016-2017



Conclusions

- Overall IPD incidence significantly lower in 2016-2017 following PCV13 introduction for children
 - Reductions driven by serotypes 19A, 7F, and 6C (cross-protection)
 - No changes in type 3 IPD during 2007-2017
 - Rates have plateaued since 2014
- PCV13 direct effects on IPD among adults ≥ 65 years old were likely very limited during this observation period
- No evidence of serotype replacement
- New PCVs covering top 7 NVT pediatric strains would target a relatively small IPD burden in children (~ 3 cases/100,000)
- The same PCV for children has the potential of reducing a large burden among adults 65 years or older through indirect effects

Thank you!

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

